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ART UNIT	PAPER NUMBER
2662	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/774,715	IWAMURA ET AL.
	Examiner	Art Unit
	Donald L. Mills	2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>26 October 2005</u>.

2a) ☐ This action is **FINAL**.　　2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-18</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-4,6-14 and 16-18</u> is/are rejected.

7) ☒ Claim(s) <u>5 and 15</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claim 10 is rejected under 35 U.S.C. 102(b) as being anticipated by Ma et al (US

5,953,338), hereinafter referred to as Ma.

Regarding claim 10, the primary reference further teaches *a bandwidth control method*

that issues permission to permit transmission of ATM cells to a plurality of optical network units

and controls a bandwidth of ATM cells received from each of said optical network units

(Referring to Figure 1B, an ATM dynamic admission control system **160** connected to ATM

switch **130A** which manages calls for the ATM network from customer networks **110A, 110B,**

110C, ..., which are optically coupled. See Abstract,) *comprising*:

Dividing a transmission bandwidth which said plurality of optical network units use for

transmission of ATM cells to a basic bandwidth and a shared bandwidth/Dividing said basic

bandwidth and assigning it to said optical network units/Setting an upper-limit bandwidth which

represents an usable maximum bandwidth to each of said optical network units (Referring to

Figures 1B, 9A, and 9B, bandwidth manager **150** dynamically manages bandwidths utilized by

virtual paths in reaction or anticipation to traffic volume levels, comprising a base level. The

bandwidth manager **150** assigns shared bandwidth based upon the bandwidth capacity (upper-

limit bandwidth), monitored bandwidth, and the scenario when a client exceeds its allocated

bandwidth, in response to the usage monitor module **145**. See column 12, lines 66-67 and

column 13, line 1;)

Supervising traffic situation of ATM cells from any one of a plurality of said optical

network units (Referring to Figure 1B, centralized control module **160** manages calls for the

network from customer networks **110A, 110B, 110C, ...**, which are optically coupled. See

column 6, lines 35-36;)

Detecting receiving bandwidth status which represents a bandwidth used by said any one

of said optical network units (Referring to Figure 1B, 9A, and 9B, centralized call admission

control/usage monitor module **145** monitors the traffic load of clients. See column 8, lines 13-

17;)

Comparing a detected receiving bandwidth status and a bandwidth which is set as an

usable area to said any of said optical network units, and judging whether a wider bandwidth

than said bandwidth which is set to said any one of said optical network units is needed or

not/Where it is judged that said wider bandwidth than said bandwidth which is set to be said any

one of said optical network units is needed, assigning a shared bandwidth with an amount

according to said upper-limit bandwidth set to said any one of said optical network units within

said shared bandwidth, to said any one of said optical network units (Referring to Figures 1B,

9A, and 9B, bandwidth manager **150** dynamically manages bandwidths utilized by virtual paths

in reaction or anticipation to traffic volume levels, comprising a base level. The bandwidth

manager **150** assigns shared bandwidth based upon the bandwidth capacity (upper-limit

bandwidth), monitored bandwidth, and the scenario when a client exceeds its allocated

bandwidth, in response to the usage monitor module **145**. See column 12, lines 66-67 and column 13, line 1,)

Where a sum of said basic bandwidth of said any one of said optical network units and said assigned shared bandwidth does not exceed said upper-limit bandwidth, setting said sum as a bandwidth usable by said any of said optical network units, and where the sum exceeds said upper-limit bandwidth, setting said upper-limit bandwidth as a bandwidth usable by said any one said optical network units (Note: the Examiner interprets the sum of the basic bandwidth and shared bandwidth as logically equivalent to the total capacity of the link which cannot be exceeded. Since, Ma discloses the bandwidth capacity (upper-limit bandwidth) as the limiting value, the sum of the basic and shared bandwidth will never exceed the bandwidth capacity. Therefore, the bandwidth capacity (upper-limit bandwidth) will always act as the limiting value, which is equivalent to the claimed invention. Referring to Figures 1B, 9A, and 9B, bandwidth manager **150** dynamically manages bandwidths utilized by virtual paths in reaction or anticipation to traffic volume levels, comprising a base level. The bandwidth manager **150** assigns shared bandwidth based upon the bandwidth capacity (upper-limit bandwidth), monitored bandwidth, and the scenario when a client exceeds its allocated bandwidth, stored by the bandwidth manager **150**. See column 12, lines 66-67 and column 13, line 1,)

Issuing access permission to said any one of said optical network units according to said bandwidth set to be usable by said any one of said optical network units (Referring to Figure 8, centralized call admission control/monitor module **145** tags the borrowed bandwidth requests and returns the requests, which are utilized for setting up the virtual path, to the client according to the assigned bandwidth by the bandwidth manager module **150**. See column 7, lines 61-63.)

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claim 1-4, 6, 9, 11-13, 15, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable

over by Ma et al (US 5,953,338), hereinafter referred to as Ma.

Regarding claim 1, Ma discloses a dynamic admission control system for ATM networks,

which comprises:

A traffic supervisory unit for supervising a traffic situation of upstream ATM cells sent to

said own ATM communication apparatus from the optical network units (Referring to Figure 1B,

centralized control module **160** coupled to ATM switch **130A** manages calls for the network

from customer networks **110A, 110B, 110C, ...,** which are optically coupled. See column 6,

lines 35-36,) *the traffic supervisory unit having a supervisory unit of a receiving bandwidth for*

detecting the receiving bandwidth for receiving ATM cells from each of the optical network units

(Referring to Figure 1B, 9A, and 9B, centralized call admission control/usage monitor module

145 monitors the traffic load of clients. See column 8, lines 13-17,) *and a supervisory unit of*

cell overflow situation for detecting a cell overflow situation of a sending buffer of ATM cells in

each of the optical network units (Note: Examiner interprets cell overflow as a condition when

allocated bandwidth is exceeded, which is consistent with the Applicant's definition on page 18,

lines 19-25. Referring to Figures 1B, 9A, and 9B, centralized call admission control/usage

monitor module **145** dynamically allocates additional bandwidth when a client exceeds its

allocated bandwidth. See column 7, lines 56-59.)

A bandwidth controller having a basic bandwidth assigner for assigning a basic

bandwidth for sending ATM cells to each of said optical network units, an upper-limit bandwidth

storage means for storing an upper-limit bandwidth set as an upper limit of bandwidth for

transmission of ATM cells of each of said optical network units, a shared bandwidth assigner for

assigning a shared bandwidth which is usable with a basic bandwidth to each of the optical

network units according to value of said upper-limit bandwidth based on a receiving bandwidth

and cell overflow situation are supplied from the traffic supervisory unit (Referring to Figures

1B, 9A, and 9B, bandwidth manager **150** dynamically manages bandwidths utilized by virtual

paths in reaction or anticipation to traffic volume levels, comprising a base level. The bandwidth

manager **150** assigns shared bandwidth (usable with the base level) based upon the bandwidth

capacity (upper-limit bandwidth), monitored bandwidth, and the scenario when a client exceeds

its allocated bandwidth, in response to the usage monitor module **145**. See column 12, lines 66-

67 and column 13, line 1,) *and a shared bandwidth storage means for storing shared bandwidth*

assigned to each of the optical network units by said shared bandwidth (Referring to Figure 1B,

bandwidth manager **150** comprises memory for storing the received instructions.)

A generator of access permission for generating access permission to assign optical

network units according to the shared bandwidth assigned by said shared bandwidth assigner

(Referring to Figure 8, centralized call admission control/monitor module **145** tags the borrowed

bandwidth requests and returns the requests, which are utilized for setting up the virtual path, to

the client according to the assigned bandwidth by the bandwidth manager module **150**. See

column 7, lines 61-63.)

Ma does not disclose *an ATM communication apparatus connected with a plurality of*

optical network units for issuing access permission to permit transmission of ATM cells to said

plurality of optical network units and for receiving ATM cells.

Ma teaches an ATM dynamic admission control system **160** connected to an ATM switch

130A which manages calls for the ATM network from optically coupled customer networks

110A, 110B, 110C, ... (See Figure 1B and Abstract.)

It would have been obvious to one of ordinary skill in the art at the time of the invention

to implement the control module of Ma in an ATM switch. One of ordinary skill in the art would

have been motivated to do so in order to consolidate systems, reduce costs, and increase system

efficiency. In so doing, unexpected results are not generated.

Regarding claims 2 and 12, the primary reference further teaches *a bandwidth fair*

distributor for assigning the shared bandwidth based on the receiving bandwidth and the cell

overflow situation supplied by the traffic supervisory unit (Referring to Figures 1B, 9A, and 9B,

bandwidth manager **150** dynamically manages bandwidths utilized by virtual paths in reaction or

anticipation to traffic volume levels, inherently assigning shared bandwidth based upon the

bandwidth capacity, monitored bandwidth, and the scenario when a client exceeds its service

level, in response to the usage monitor module **145**. See column 12, lines 66-67 and column 13,

line 1;) *and an upper-limit bandwidth limiter for limiting the upper-limit bandwidth based on the*

upper-limit bandwidth stored in the upper-limit bandwidth storage means (Referring to Figure

10, bandwidth manager module **150** calculates the sum of the bandwidth for all virtual channels

on each virtual path to determine whether the total virtual channel bandwidth is larger (upper-limit bandwidth) than the new virtual path bandwidth. See column 13, lines 43-47.)

Regarding claims 3 and 11, the primary reference further teaches *a plurality of divided sub-shared bandwidth storage means and the shared bandwidth assigner further comprises a shared bandwidth selector for selecting any one of a plurality of the sub-shared bandwidth storage means for each of said optical network units* (Referring to Figure 2, centralized control module **160** allows a carrier to dynamically assign unused capacity to other clients, inherently comprising sub-shared bandwidth and memory to store the allocation of the bandwidth. See column 8, lines 54-59.)

Regarding claims 4 and 13, the primary reference further teaches *an access bandwidth storage means for storing an access bandwidth which is made by adding said basic bandwidth and said shared bandwidth for each of said optical network units* (Note: the Examiner interprets the access bandwidth as logically equivalent to the upper-limit bandwidth, since it is defined as the total capacity of the link. Referring to Figures 1B, 9A, and 9B, bandwidth manager **150** dynamically manages bandwidths utilized by virtual paths in reaction or anticipation to traffic volume levels, comprising a base level. The bandwidth manager **150** assigns shared bandwidth (usable with the base level) based upon the bandwidth capacity (upper-limit bandwidth), monitored bandwidth, and the scenario when a client exceeds its allocated bandwidth, stored by the bandwidth manager **150**. See column 12, lines 66-67 and column 13, line 1,) *a bandwidth comparator that compares the receiving bandwidth of effective cells received from each of the optical network units and judges that the cell is in the overflow situation in the case where an access bandwidth judged by the bandwidth controller and a receiving cell bandwidth of each of*

the optical network units are the same or approximately the same (Note: Examiner interprets cell overflow as a condition when allocated bandwidth is exceeded, which is consistent with the Applicant's definition on page 18, lines 19-25. Referring to Figures 1B, 9A, and 9B, centralized call admission control/usage monitor module **145** dynamically allocates additional bandwidth when a client exceeds its service level agreement. See column 7, lines 56-59.)

Regarding claims 6 and 15, the primary reference further teaches *assigning a plurality of separate assignment bandwidths for one optical network unit to a plurality of the sub-shared bandwidths respectively* (Referring to Figure 1B, when a client is not using all of the capacity which the client has a reservation to, the unused capacity is made available to other clients. See column 8, lines 57-59.)

Regarding claims 9 and 18, the primary reference further teaches *assigning one of the basic bandwidth and the shared bandwidth based on the contents of a plurality of subscriber contracts set for one optical network unit* (Referring to Figure 1B, 5A, 5B, 5C, and 5D, if a client is not using all of the capacity which the client has a reservation to use according to their contracts, the unused capacity is made available to other clients. See column 11, lines 66-67 and column 12, lines 1-6 and 26-30.)

5.   Claims 7, 8, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al (US 5,953,338), hereinafter referred to as Ma, in view of Umehira et al. (US 6,188,697 B1), hereinafter referred to as Umehira.

Regarding claims 7 and 16 as explained above in the rejection statement of claims 1 and 10; Ma teaches all of the claim limitations of claims 1 and 10 (parent claims). Ma does not

disclose *assigning the shared bandwidth based on a predetermined priority for each of the sub-shared bandwidths.*

Umehira teaches an ATM cell transport system comprising cells with a high and low priority. And during output intervals of cells of a high priority, lower priority cells are inserted when unused bandwidth is available (See Figure 2, column 7, lines 30-42.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement cell priority method of Umehira in the system of Ma. One of ordinary skill in the art would have been motivated to do so in order to realize a system that provides high frequency utilization efficiency that is capable of making efficient use of allocated bandwidth for different classes of service.

Regarding claims 8 and 17 as explained above in the rejection statement of claims 1 and 10; Ma teaches all of the claim limitations of claims 1 and 10 (parent claims). Ma does not disclose *providing a plurality of kinds basic bandwidths and assigning the shared bandwidth in proportion to each of the basic bandwidths.*

Umehira teaches an ATM cell transport system comprising cells with a high and low priority buffers. And during output intervals of cells of a high priority, lower priority cells are inserted, directly proportional to the number of buffers, when unused bandwidth is available (See Figure 2, column 7, lines 30-42.)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement cell priority method of Umehira in the system of Ma. One of ordinary skill in the art would have been motivated to do so in order to realize a system that provides high

frequency utilization efficiency that is capable of making efficient use of allocated bandwidth for

different classes of service.

Allowable Subject Matter

6.   Claims 5 and 14 are objected to as being dependent upon a rejected base claim, but would

be allowable if rewritten in independent form including all of the limitations of the base claim

and any intervening claims.

Response to Arguments

7.   Applicant's arguments filed October 26, 2005 have been fully considered but they are not

persuasive.

Rejection Under 35 USC § 102

On page 13 of the remarks, regarding claim 10, in response to applicant's arguments, the

recitation *an Asynchronous Transfer Mode (ATM) communication apparatus in a point-to-*

multipoint optical transfer system where the ATM communication apparatus is connected to a

plurality of optical network units through an optical branching device, and the ATM

communication apparatus, receives a multiplexed signal obtained when the optical branching

device multiplexes optical signals transmitted by the optical network units, and branches an

optical signal at the optical branching device to transmit to the optical network units, the ATM

communication apparatus sends to each of the optical network units by using a certain area in

an ATM cell, transmission timing and a transmission bandwidth of an ATM cell to be transmitted

to the ATM communication apparatus to give an access right to control a communication

bandwidth to perform ATM-cell receiving control in the optical transfer system, the ATM

communication apparatus comprising has not been given patentable weight because the

recitation occurs in the preamble. A preamble is generally not accorded any patentable weight

where it merely recites the purpose of a process or the intended use of a structure, and where the

body of the claim does not depend on the preamble for completeness but, instead, the process

steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190

USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA

1951).

On page 14 of the remarks, regarding claims 1 and 10, the Applicant argues Ma does not

disclose *a shared bandwidth assigner for assigning a shared bandwidth which is usable with a*

basic bandwidth to each of said optical network units according to value of said upper-limit

bandwidth based on a receiving bandwidth and cell overflow situation are supplied from the

traffic supervisory unit. The instant application defines the "upper-limit bandwidth" as the

uppermost bandwidth that can be assigned from the shared bandwidths (See page 21, lines 20-

21.) Ma discloses the maximum transmission capacity as the bandwidth capacity (See column

12, lines 66-67 and column 13, line 1.) Based upon the Applicant's description of the "upper-

limit bandwidth," the Examiner interprets the "upper-limit bandwidth" as logically equivalent to

the bandwidth capacity. And, Ma discloses bandwidth manager **150**, which dynamically

manages bandwidths utilized by virtual paths in reaction or anticipation to traffic volume levels,

comprising a base level. The bandwidth manager **150** assigns shared bandwidth (usable with the

base level) when a client exceeds its allocated bandwidth, based upon the bandwidth capacity

(upper-limit bandwidth) and monitored bandwidth as detected by the usage monitor module **145**

(See column 12, lines 66-67 and column 13, line 1.) Therefore, Ma discloses *a shared*

bandwidth assigner for assigning a shared bandwidth which is usable with a basic bandwidth to

each of said optical network units according to value of said upper-limit bandwidth based on a

receiving bandwidth and cell overflow situation are supplied from the traffic supervisory unit.

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Donald L. Mills whose telephone number is 571-272-3094. The

examiner can normally be reached on 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Donald L Mills

Dc M

January 8, 2006

JOHN PEZZLO
PRIMARY EXAMINER